M.R.O. I—77,000—2-6-37.

(1) Number of pages 31

(2) Date of repair 11-7-41

(3) Initials of the Referencer

MADRAS RECORD OFFICE.

Government of Madras.

Public works. DEPARTMENT.

G.O. No. 3107 Press/Mis.

152-161

Dated 9-12- 1871.

Not to be folded or roughly handled

Proceedings of the Madras Government, Public Works Department, 9th December 1871.

Read the following papers :—

No. 152. From the Acting Superintending Engineer, 1st Division, to the Secretary to Government, Public Works Department, dated Dowlaishweram, 1st September 1871, No. 1,778.

In reply to G. O. of the 7th August 1871, No. 2,040, I have the honour to observe that I do not consider that in this Presidency any great changes are required to keep the Superintending Engineers well acquainted with the progress of a work. Our Progress Reports are so arranged that the authority and date of sanction of any work, the amount of expenditure, if any, in previous years, the allotment for the current year, and the month in which this was made, the outlay in any month, and the total outlay up to date of any Progress Report, can be seen at a glance almost. In preparing this form every endeavour was made to have it as simple as possible, and free from all petty details, so that the general course of the expenditure might be clearly traced as frequently as possible. It was originally intended that the column of remarks should contain, in each month, in lump sums the sub-heads of the estimate to which the outlay for that month belonged. With this information before an officer the average rate of cost of a work can be easily ascertained, this practice has discontinued of late years, I presume, because some more time is required to prepare the reports in so complete a form, but it would be well worthwhile to give another week for this work, and secure an efficient check on the expenditure as it is being incurred.

2. Our Progress Reports also show the dates of last inspection of all works entered in the Progress Report, and this enables a Superintending Engineer to observe at once if the progress of a work is being carefully watched by an Executive Engineer, and to call for any explanation he may consider necessary.

3. My own experience in the Department is that no better plan can be adopted by a Superintending Engineer, than to do as Sir A. Cotton did on these works, and that is to visit the Range Officers as often as possible, and with them go into the details of the works; this is now almost impossible from our being cumbered with such a mass of office details and correspondence; but to give the Government satisfaction, and make his subordinates take an interest in their duties, a Superintending Engineer should be on the works as much as possible, and obtain the information he requires on the spot for himself.

No. 153. From the Superintending Engineer, 2nd Division, to the Secretary to Government, Public Works Department, dated Bazorah, 21st August 1871, No. 62.

Referring to G. O., No. 2,040, 7th August, I have the honour to enclose the form of Comparative Statement ordinarily used as answering the requirements of Government.

1 Statement.

2. I am not clear that G. O., No. 2,049, dated 9th August, does not supersede the necessity for this reply, but no reference to the former is made in the latter.

Comparative Statement of ______

Description of Charges.	As per original Estimate sanctioned in G. O., No. , dated .			Work executed up to			Work to be executed.			Total as per revised Estimate.			Increase.	Decrease.	Remarks.
	Quantity.	Rate.	Amount.	Quantity.	Rate.	Amount.	Quantity.	Rate.	Amount.	Quantity.	Rate.	Amount.			

No. 154. From the Superintending Engineer, 3rd Division, to the Secretary to Government, Public Works Department, dated Bellary, 1st November 1871, No. 1,464.

I HAVE the honour with reference to G. O., No. 2,040, dated 7th August last, to inform that works generally in this division are not so large as to call for the introduction of special Work Registers, and as I have every reason to believe that the system referred to in paragraph 2 of G. O. under reply is followed in all ranges, such a Register as is referred to in the Circular of the Government of India can easily be adopted on a form being decided upon.

No. 155. From the Superintending Engineer, 4th Division, to the Secretary to Government, Public Works Department, dated Madras, 7th September 1871, No. 2,413.

AGREEABLY to paragraph 3 of G. O., No. 2,040, dated 7th August 1871, I have the honour to enclose a form of statement which I would recommend should be submitted by each Range Officer executing large projects.

1 Form of Statement.

2. I think it will be sufficient if the statement be sent in quarterly.

Range.	Name of work.	Amount of Estimate.	When and by whom sanctioned.	Estimated cost.					Actual cost.			Difference.		Remarks showing state of progress.
				Sub-head of Estimate.	Item of work.	Quantity.	Rate.	Amount.	Quantity.	Rate.	Amount.	Increase.	Decrease.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

2

Proceedings of the Madras Government, Public Works Department,
9th December 1871.

No. 156. From the Officiating Superintending Engineer, 5th Division, to the Secretary to Government, Public Works Department, dated Salem, 1st November 1871, No. 173.

In answer to G. O., No. 2,040, dated 7th August 1871, requesting an expression of opinion as to the best means of preserving agreement of actual with estimated cost of work, I have the honour to report that I consider nothing can be better or simpler than our present form of Comparative Statement, submitted monthly, quarterly, or half yearly, as the case may require.

2. The order of the Government of India calling for a report on this matter seems mainly to concern a case in which a work is of such magnitude as to lie in more than one executive charge or division; cases of this kind are in this Presidency likely to be very rare, and I therefore apprehend that very little further demand will, in regard of the point in question, be made on the time of Executive Officers and establishments, otherwise I would venture to suggest that the correspondence of, and number of returns furnished by, Executive Officers, has increased enormously, and year by year, since the present re-organization of the Department, and that the tendency is to further increase of the same without reference to, or consideration of, the capabilities of the several establishments; many new returns and statements are annually called for, but it is rarely or never that one is ordered to be discontinued.

No. 157. From the Superintending Engineer, 6th Division, to the Secretary to Government, Public Works Department, dated Tanjore, 14th August 1871, No. 427.

With reference to G. O., No. 2,040, dated the 7th instant, I have the honour to inform you that I am of opinion that the information which the Government of India consider it expedient that the Superintending and Chief Engineers should have regarding the agreement of actual with estimated cost of large works of Irrigation and Navigation, can best be obtained in the form* given for the Registers of Works in the Controller's Manual of Forms of Accounts, the headings regarding the sub-divisions of work being modified according to the nature of each work. As the working season in this division closes about the end of June, and as the Superintending Engineer has ample opportunities, during his tours of inspection, of enquiring into, and ascertaining from, the Registers of Works maintained in the Range Offices any tendency to excess on large works, I would propose that the information be supplied by Range Officers half-yearly on the 30th June and 31st December in the form above suggested for all large works exceeding Rupees 20,000 each.

* B. B. I.

No. 158. From the Acting Superintending Engineer, 7th Division, to the Secretary to Government, Public Works Department, dated Coimbatore, 27th October 1871, No. 166.

With reference to G. O., No. 140 of 19th October, I have the honour to submit a Form which, in my opinion, affords the information required, and is, I consider, a much more useful one than the B. B. I. form of Register of Works.

FORM.

Register of Works in the Coimbatore Range, Coimbatore District, Coimbatore Channel, *sanctioned in G. O., No.* *of*

Sub-heads of the Estimate.	Per.	Estimate. Quantity.	Estimate. Rate. RS. A. P.	Estimate. Amount. RS. A. P.	Expenditure in this Month. Quantity.	Expenditure in this Month. Rate. RS. A. P.	Expenditure in this Month. Amount. RS. A. P.	Expenditure up to this Month. Quantity.	Expenditure up to this Month. Rate. RS. A. P.	Expenditure up to this Month. Amount. RS. A. P.	Remarks.
Earthwork	Cubic yard.	10,600	0 2 0	1,325 0 0	10,600	0 2 6	1,656 4 0	10,600	...	1,656 4 0	Completed.
Do.	do.	15,000	0 3 0	2,812 8 0	10,050	0 2 9	1,727 5 6	15,000	...	2,578 2 0	Do.
Do.	do.	20,220	0 4 0	5,055 0 0	1,600	0 4 0	400 0 0	15,600	...	3,900 0 0	In progress.
Bridge work of 1 arch of 30 feet span over the channel.											
Rough stone in mortar.	Cubic yard.	30	3 0 0	90 0 0	......	...	......	30	3 0 0	90 0 0	Completed.
Do. do.	do.	52	3 8 0	182 0 0	......	...	......	52	4 0 0	208 0 0	Do.
Arch work, brick in do.	do.	75	7 0 0	525 0 0	75	7 0 0	525 0 0	75	7 0 0	525 0 0	Do.
Plastering with chunam	Square.	28½	3 0 0	85 8 0	28½	3 0 0	85 8 0	28½	3 0 0	85 8 0	Do.
Centrings	R. ft.	30	5 0 0	150 0 0	30	5 0 0	150 0 0	30	5 0 0	150 0 0	Do.
Metalling the roadway.	Cubic yard.	17	1 0 0	17 0 0	......	...	......	......	...	......	In progress.
Excavating foundation.	do.	60	0 2 6	9 6 0	......	...	......	70	0 2 6	10 15 0	Completed.
Escape Weir, 12 feet body.											
Rough stone in mortar.	do.	50	3 0 0	150 0 0	......	...	......	......	...	......	In progress.
Cut stone	Cubic feet.	18	0 8 0	9 0 0	......	...	......	......	...	......	In progress.
Concrete flooring to apron	Cubic yard.	12	2 8 0	30 0 0	......	...	......	......	...	......	In progress.
Upright stones well (3′ × 1′ × 8″) grooved	Each.	4	3 0 0	12 0 0	......	...	......	......	...	......	In progress.
Wooden shutters ...	Cubic feet.	6	3 0 0	18 0 0	......	...	......	......	...	......	In progress.
Excavating foundation.	Cubic yard.	28	0 2 6	4 6 0	......	...	......	28	0 2 6	4 6 0	Completed.
Sundries	Cent.	...	5 0 0	525 4 0	......	...	190 4 0	......	...	420 10 6	
	...	...	...	11,000 0 0	......	...	4,734 5 6	......	...	9,628 13 6	

Coimbatore,
27th October 1871.

(Signed) W. FAREWELL,, Lieutenant-Colonel, S. C.,
Acting Superintending Engineer, 7th Division.

No. 159. From the Superintending Engineer, 8th Division, to the Secretary to Government, Public Works Department, dated Camp at Sholapoorum, 19th September 1871, No. 2,222.

In reference to G. O. of the 7th August 1871, No. 2,040, enquiring as to the manner in which the orders of the Government of India can best be carried out in this Presidency in respect to large works of Irrigation and Navigation, I have the honour to enclose a form which I consider will most readily and thoroughly afford the required information.

FORM.

Project for the diversion of the Perryaur. Amount of Estimate Rupees . Sanctioned in G. O., No. , dated

NORTHERN MAIN CHANNEL, MILES 1 TO 5 INCLUSIVE.

Abstract Statement showing the Progress made with, and the cost of, the works in the first reach up to the end of April 1870.

Abstract of the Estimate.				Works executed up to date and paid for.		Works executed up to date but not paid for.		Total work executed up to date.		Average cost of work up to date.	
Quantities in Cubic yards.	Description of work.	Rate.	Amount.	Quantity or Number.	Expenditure.	Quantity or Number.	Amount due to Contractors and workmen.	Quantity.	Expenditure.		
		RS. A. P.	RS. A. P.		RS. A. P.		RS. A. P.		RS. A. P.	RS. A. P.	
30 C. yds.	Dressed Gneiss	25 0 0	750 0 0	15 C. yds.	375 0 0	10 C. yds.	250 0 0	25 C. yds.	625 0 0	24 8 0	C. yards.
300 ,,	Dressed Ashlar	15 0 0	4,500 0 0	200 ,,	3,000 0 0	50 ,,	750 0 0	250 ,,	3,750 0 0	14 12 0	Do.
1,000 ,,	Roughly dressed Ashlar ...	11 8 0	11,500 0 0	600 ,,	6,900 0 0	200 ,,	2,300 0 0	800 ,,	9,200 0 0	11 4 0	Do.
1,000 ,,	Cyclopean rubble in mortar ...	7 0 0	7,000 0 0	700 ,,	4,900 0 0	100 ,,	700 0 0	800 ,,	5,600 0 0	6 8 0	Do.
800 ,,	Brick in Mortar	6 0 0	4,800 0 0	500 ,,	3,000 0 0	100 ,,	600 0 0	600 ,,	3,600 0 0	5 12 0	Do.
5,000 ,,	Rubble in Mortar	5 8 0	27,500 0 0	3,500 ,,	19,250 0 0	1,000 ,,	5,500 0 0	4,500 ,,	24,750 0 0	5 6 0	Do.
300 Sqrs.	Pointing	1 0 0	300 0 0	200 Sqrs.	200 0 0	50 Sqrs.	50 0 0	250 Sqrs.	250 0 0	0 14 0	Sqrs.
1,500 C. yds.	Rubble apron	2 8 0	3,750 0 0	1,000 C. yds.	2,500 0 0	300 C. yds.	750 0 0	1,300 C. yds.	3,250 0 0	2 14 0	C. yards.
150 ,,	Pitching	3 0 0	450 0 0	100 ,,	300 0 0	30 ,,	90 0 0	130 ,,	390 0 0	2 12 0	Do.
800 ,,	Concrete	4 0 0	3,200 0 0	500 ,,	2,000 0 0	200 ,,	800 0 0	700 ,,	2,800 0 0	3 12 0	Do.
400 ,,	Filling in	0 4 0	100 0 0	200 ,,	50 0 0	150 ,,	37 8 0	350 ,,	87 8 0	0 3 0	Do.
500 ,,	Clay puddle	0 8 0	250 0 0	300 ,,	150 0 0	150 ,,	75 0 0	450 ,,	225 0 0	0 7 0	Do.
80,000 ,,	Gravel cutting	0 2 6	12,500 0 0	40,000 ,,	6,250 0 0	20,000 ,,	3,125 0 0	60,000 ,,	9,375 0 0	0 2 3	Do.
75,000 ,,	Cutting (hard gravel) ...	0 2 9	12,890 10 0	37,500 ,,	6,445 5 0	18,750 ,,	3,222 10 6	56,250 ,,	9,667 15 6	0 2 6	Do.
40,000 ,,	Do. gravel	0 2 3	5,625 0 0	20,000 ,,	2,832 8 0	10,000 ,,	1,416 4 0	30,000 ,,	4,248 12 0	0 2 0	Do.
10,000 ,,	Gravel cutting	0 2 0	1,250 0 0	5,000 ,,	625 0 0	2,500 ,,	312 8 0	7,500 ,,	937 8 0	0 1 9	Do.
23,000 ,,	Cutting (ordinary soil) ...	0 1 3	1,796 14 0	11,500 ,,	898 7 0	5,750 ,,	449 3 6	17,250 ,,	1,347 10 6	0 1 0	Do.
100,000 ,,	Do. (sandy)	0 1 0	6,250 0 0	50,000 ,,	3,125 0 0	25,000 ,,	1,562 8 0	75,000 ,,	4,687 8 0	0 0 9	Do.
40,000 ,,	Banking	0 2 0	5,000 0 0	20,000 ,,	2,500 0 0	10,000 ,,	1,250 0 0	30,000 ,,	3,750 0 0	0 1 9	Do.
4,000 ,,	Puddling	0 4 6	1,125 0 0	2,000 ,,	562 8 0	1,000 ,,	281 4 0	3,000 ,,	843 12 0	0 4 3	Do.
60,000 ,,	Tamping	0 0 2	625 0 0	30,000 ,,	312 8 0	15,000 ,,	156 4 0	45,000 ,,	468 12 0	0 0 1½	Do.
6,000 ,,	Rough stone pitching ...	2 0 0	12,000 0 0	3,000 ,,	6,000 0 0	1,500 ,,	3,000 0 0	4,500 ,,	9,000 0 0	1 14 0	Do.
1,500 ,,	Gravel backing	0 4 0	375 0 0	500 ,,	125 0 0	500 ,,	125 0 0	1,000 ,,	250 0 0	0 3 6	Do.
50,000 Sq. yds.	Turfing	0 0 9	2,343 12 0	25,000 ,,	1,171 14 0	12,500 ,,	585 12 0	37,500 ,,	1,757 13 0	0 0 8	Sqr. yards.

NOTE.—This Statement should be despatched to the Superintending Engineer monthly.

No. 160. From the Special Executive Engineer, Wynaad, to the Secretary to Government, Public Works Department, dated Vythery, 23rd August 1871, No. 411.

In reply to G. O., No. 2,040, dated 7th instant, I have the honour to reply that in this district there are no works of the large description contemplated in the above, but, as regards the general question, the form observed in the Work Register would, I should say, answer every purpose if a line were left for explanatory remark.

Name of work.

Sub-heads.	Foundation masonry.		Superstructure.		Centering.	
	Quantity.	Cost.	Quantity.	Cost.	Quantity.	Cost.
Estimated amount as sanctioned						
Work executed to date ...						
Remarks						

No. 161. ORDER THEREON, 9th December 1871, No. 3,107.

ACCOUNT, No. 11.

THE papers above referred to will now be forwarded to the Controller of Public Works Accounts and to the Chief Engineer for Irrigation, with a view to their selection of a form embodying the information considered necessary by the Government of India, after due consideration of the remarks and suggestions of the several Superintending Engineers.

2. It is necessary that the particular circumstances under which it is proposed to demand this information should be kept fully in view. It is required in order to enable Chief or Superintending Engineers in charge of large projects to detect not alone actual, but also impending excesses on the original estimates, whether owing to enhancement of the rates, to under-estimation of the quantities of work required, or to any other of the ordinary causes, and it is further thought desirable to ensure more fully than before that deviations from the estimate in the distribution of the proposed outlay over the several items or sub-divisions of a project should not pass unquestioned.

3. One of the officers who have recently been consulted on the subject suggests that the present form of Monthly Progress Report, with the addition in lump sums of the sub-heads of the estimate to which the outlay for the month belonged, would suffice for the purpose in view, but as neither the quantity nor rate in the estimate, nor the quantity, rate, and outlay of the month on the several sub-heads is proposed to be inserted, and as consequently excess in the expenditure on a sub-head, or in the rates paid would not necessarily be detected by an inspection of such a document, the arrangement is not sufficiently complete.

The Superintending Engineer of the 2nd Division forwards a form of Comparative Statement, ordinarily used, as answering the requirements of the Supreme Government, and the Officer in charge of the 5th Division makes a similar sugges-

Proceedings of the Madras Government, Public Works Department,
9th December 1871.

tion. The information given in this document, which is supposed invariably to accompany revised estimates of works of any importance, is very complete. It exhibits the quantity, rate, and cost of each description of work as originally estimated, of that actually constructed; the quantity, rate, and cost under each sub-head required to complete the structures (again estimated from actual measurement), and the total estimated cost also in detail as revised. The preparation of such an abstract is however a laborious process, and is in reality only necessary when it becomes expedient to submit revised estimates. The form is therefore ill-calculated for use as a periodical return.

Two Officers express an opinion that the 'Register of Works' kept in all ranges gives the necessary information, and one of them proposes that it should be furnished half-yearly to the Superintending Engineer. The form referred to shows the expenditure on a work during each month or other period, under each sub-head of the estimate, and compares the total expenditure to date with the estimate. All this should be known and constitutes most of the information necessary, but something more could be inserted with advantage, and moreover the form itself would require re-arrangement to adapt it for use on any work of magnitude, such as is contemplated in the Circular of the Government of India.

The other Officers, to whom reference has been made, severally forward forms of statement which they propose for adoption; but though all of them would answer the purpose in view to a greater or less extent, none would do so as fully as is desirable.

4. The three forms now in use in this department and to which allusion has been made by the Superintending Engineers, namely, 'the Comparative Statement,' the 'Register of Works,' and the 'Progress Report,' though they are intended to subserve different purposes, have much in common in respect of the information which they severally contain, and it is considered that a statement or form of Progress Report, which should be to some extent a combination of the three, would not necessarily be voluminous, and would probably best answer the purpose in view.

The Progress Report which has during past years and up till now been required by Government from the Madras Irrigation and Canal Company is the result of practical experience as to the necessities in the case of the construction of large works, and though that Return might probably be modified with advantage a reference to it would supply useful information as to what details are really required and can readily be supplied.

(True Extract.)

Colonel, R.E.,

Secretary to Government.

To the Acting Chief Engineer for Irrigation.
To Superintending Engineers.
To the Controller of Public Works Accounts.

Exd. S. T. Augustin.

SUPERINTENDING ENGINEER'S OFFICE, 1ST DIVISION.
DOWLAISHWARUM, 1st September 1871

No. 1778

From

Major J. F. Fischer R.E.

Acting Superintending Engineer
1st Division

To

Colonel J. Carpendale R.E.

Secretary to Government D. P. W.
MADRAS

SIR,

In reply to G.O. of the 7th August 1871 No 2040, I have the honor to observe that I do not consider that in this Presidency any great changes are required to keep the Superintending Engineers well acquainted with the progress of a work. Our Progress Reports are so arranged that, the authority and date of sanction of any work, the amount of expenditure, if any, in previous years, the allotment for the Current year, and the month in which this was made, the outlay in any month, and the total outlay upto date of any Progress Report, can be seen at a glance almost. In preparing this form, every endeavour was made to have it as simple as possible, and free from all petty details, so that, the general course of the expenditure might be clearly traced as frequently as possible

possible; It was originally intended that, the column of Remarks should contain in each month in lump sums, the sub-heads of the Estimate to which the outlay for that month belonged- with this information before an Officer, the average rate of cost of a work can be easily ascertained, this practice has [illegible] discontinued of late years I presume, because some more time is required to prepare the Reports in so complete a form, but it would be well worth while to give another week for this work, and secure an efficient check on the expenditure as it is being incurred.

4/. Our Progress Reports also shew the dates of last inspection of all works entered in the Progress Report, and this enables a Superintending Engineer to observe at once, if the progress of a work is being carefully watched by an Executive Engineer, and to call for any explanation he may consider necessary.

3/. My own experience in the De:partment is that, no better plan can be adopted by a Superintending Engineer, than

to

to do as Sir A. Cotton did on these works,
and that is, to visit the Range Officers
as often as possible, and with them go into
the details of the works – this is now almost
impossible from our being cumbered with
such a mass of Office details and correspond-
-ence, but to give the Government satisfaction
and make his subordinates take an interest
in their duties, a Superintending Engineer
should be on the works as much as possible,
and obtain the information he requires
on the spot for himself.

I have the honor to be
Sir,
Your most Obdt. Servant

Geo: T: Tulloch (?) Major R.E.
Acting Supdg. Engineer 1st Dn.

Proy Aug /71 No 63-64

P. W. 1871 Dept
Pro. of Govt for Decr
From No 4242
The Ag: Supg: Enginr
1st Division
To The Secretary to Govt
D. P. W.
Madras

Dated 1st } Septr 1871.
Recd 8th }

No 1778

Expressing opinion tha[t]
no other than the presen[t]
System of Accounts is
necessary to afford the be[st]
method of preserving
agreement of actual
with the Estimated cos[t]
of Work.

No 3107 · 9th Decr

Cto 152

No 62

Superintending Engrs Office
2nd Dn Bangalore
21st August 1871

From
Colonel F. J. Moberly R.E.
Superintending Engineer 2nd Dn

To.
Colonel J. Carpendale R.E.
Secretary to Government
Deptt Public Works
Madras.

Enclosure
1 Statement

Sir
Referring to G. O. No 2040 - 7th Augt
I have the honor to enclose the form of Comparative Statement ordinarily used as answering the requirements of Government.

in file

2 I am not clear that G. O. No 2049 dated 9th August does not supersede the necessity for this reply but no reference to the former is made in the latter.

I have the honor to be,
Sir
Your most Obt Servant
F. J. Moberly
Col R.E.
Superintending Engineer 2d Dn

Pro 7th Aug /71 No 63-64
" 9th ———— 75-80

P. W. 1871 Dept
No 62
P. W. of Govt Offe No 401

From
The Supg Engineer
2d Division

To
The Secretary to Govt
P. W. Madras

Dated 21st August 1871
Recd 28th Aug /71

Encl 1

Encloses a form of Comparative statement ordinarily used as answering the requirements of G. O. No 2040.

No 3107 - 9th Decr

No 153

Comparative statement of...

Description of Charges	As per original Estimate sanctioned in G.O. No ... d/			Work executed upto			Work to be executed			Total as per Revised Estimate			Increase	Decrease	Remarks
	Quantity	Rate	Amount	Quantity	Rate	Amount	Quantity	Rate	Amount	Quantity	Rate	Amount			

Enclosure in letter
No 62 of 25 Aug 71
from the Sup Engr
2 Divn to the Secy
to Govt D.P.W. Madras

P.W. 4012/71

Form of
Comparative
Statement

P1

No. 1464 Superintending Engineer's Office.
3rd Division. 10
Bellary 1st November 1871.

From,

The Superintending Engineer
3rd Division.

To,
The Secretary to Government.
Public Works Deptt.
Madras.

Enclosures.

Sir,

I have the honor with reference to G. O. No 2040 dated 7th August last, to inform that works generally in this Division are not so large as to call for the introduction of Special work Registers - and, as I have every reason to believe that the system referred to in para 2 of G. O. under reply is followed in all Ranges, such a Register as is referred to in the Circular of the Government of India can easily be adopted on a form being decided upon. —

I have the honor to be
Sir,
Your Most obedt Servt

C. J. Mclary Lieut Col R.E.
Superintending Engineer 3rd Dn

Rec 7 Aug /71 No 63

P. W. 1871 Dept.
Pro. of Govt for Dec.
No. 5274

From,

The Superintending Enginee[r]
3rd Divisio[n]

To,

The Secretary to Govern[ment]
Public Works Dep[artment]
Madras

No. 1464

Dated 1st
Received 8th November 1871

ENCLOSURES.

Informing with refere[nce] to G. O. No 2040 of 7th August last, that the works in this Division are not so large as to necessitate the introduction of Special Work Register &c

No. 5107-9th Dec /71.

No 184

87

No. 2413.

Supg. Engrs Office 4th Dn
Madras 7 September 1871

From,

Colonel C. V. Wilkieson R.E.
Superintending Engineer 4th Dn

To,

Colonel J. Carpendale R.E.
Secretary to Government P.W.D.

Sir,

Agreeably to para 3 of G. O. No 2040 dated 7th August 1871 I have the honor to enclose a form of Statement which I would recommend should be submitted by each Range Officer executing large projects.

Enclosure
1 Form of Statement

2 I think it will be sufficient if the statement be sent in quarterly

I have the honor to be
Sir
Your most obedient sert

C. V. Wilkieson Col. R.E.
Supg. Engr. 4th Dn

P

Pro7 Aug/71 No 63-64

P. W. 1871 Septr Decr
Ft Pro: of Govt
From, No 4246.
The Superintending Engineer
4th Division
To,
The Secretary to Government
Public Works Deptt
Dated 7th } Septr 1871
Recd 18th }
Enc: ane: No 7/413
Enclosing a form of Statement and recommending that the same should be submitted by each range Officer executing large projects.
No 3107. 9th Decr/71

No 155

					Estimated Cost.		
Range	Name of work	Amount of Estimate.	When and by whom Sanctioned	Sub head of Estimate	Item of work	Quantity	Rate
1	2	3	4	5	6	7	8

13 9

			Actual Cost		Difference		
Rate	Amount	Quarterly	Rate	Amount	Increase	Decrease	Remarks shewing state of progress
8	9	10	11	12	13.	14	15

P.W. 4246/71

No. 173. Supg. Engr's Office 5th Dn.
Salem 1st November 1871.

14

From
The Offg. Superintg. Engineer
5th Division,
To The Secretary to Government
D.P.W.

Sir,

In answer to G.O. No. 2040 dated 7th August 1871 requesting an expression of opinion as to the best means of preserving agreement of actual with estimated cost of work, I have the honor to report that I consider nothing can be better or simpler than our present Form of Comparative Statement, submitted monthly, quarterly or half yearly, as the case may require.

2. The order of the Government of India calling for a report on this matter seems mainly to concern a case in which a work is of such magnitude as to lie in more than one Executive charge or

division; Cases of this kind are in this Presidency likely to be very rare and I therefore apprehend that very little further demand will in regard of the point in question be made on the time of Executive Officers and Establishments, otherwise I would venture to suggest that the correspondence of, and number of returns furnished by, Executive Officers has increased enormously, and year by year, since the present re-organization of the Department, and that the tendency is to further increase of the same without reference to, or consideration of, the capabilities of the several Establishments; many new Returns and Statements are annually called for, but it is rarely, or never that one is ordered to be discontinued.

I have the honor to be
Sir,
Your most Obdt. Servt.

James Vertue Capt. R.E.
Offg. Supg. Engineer
5th Dn.

15

Pao 7 Aug / 71 No 63-64

Public Works 1871 Department
Pro: of Govt for Decr
No 5368

From
The Offg. Supg: Engr.
5th Division

To,
The Secty. to Government,
P.W. Department.

Dated 1st } November 71.
Recd 10th }

No 173.

Agreement of actual with estimated cost of work.

Expressing opinion as to the best mode of preserving agreement of actual with estimated cost of work.

No 3107 - 9" Decr 71.

No 156

No 427-

Supg Engr's Office 6th Dn
Tanjore — 14th Augt 71.

16

From,

Captain R. F. Oakes. R.E.
Supg Engineer 6th Dn

To,

Colonel J. Carpendale R.E.
Secretary to Govt. D. P. W.
Madras.

Sir,

With reference to G.O. No 2040 dated the 7th Instant I have the honor to inform you that I am of opinion that the information which the Government of India consider it expedient that the Superintending and Chief Engineers should have regarding the agreement of actual with Estimated cost of large works of Irrigation & Navigation can best be obtained in the form given for the Registers of works in the Controller's Manual of forms of accounts, the headings regarding the Sub-division

+ B B I.

of

of work being modified according to the nature of each work. As the working season in this Division closes about the end of June & as the Supg Engineer has ample opportunities during his tours of inspection of enquiring into & ascertaining from the Registers of works maintained in the Range offices any tendency to excess on large works, I would propose that the information be supplied by Range officers half yearly on the 30th June & 31st December in the form above suggested for all large works exceeding Rs 20,000 each.—

I have the honor to be

Sir,

Your most Obdt Servt

J. T. Oakes Capt R.E.—

Supg Engineer 6th Dn

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Progs August/71 No 63-64

P.W. 1871 Septr
Progs of Govt for Septr
No 3867.

The Supg Engr
6th D

To, The Secretary to Govt D. P. W.

Dated 14 } Augt 71
Recd 16 }

No 3107 - 9th Decr/71

Reports, with reference to G. O. No 2040 dated the 7th Augt 71, as to the manner in which information regarding the agreement of actual with estimated cost of large works of Irrigation and navigation, can best be obtained –

No 157

No. 166

Supg Engineer's Office 7th Dn
Coimbatore 27th October 1871.

From
Lt Colonel W. Farewell S.C.
Ag Supg Engineer 7th Dn

To
Colonel J. Carpendale R.E.
Secretary to Govt P.W.D.

Sir,

With reference to G.O. No. 140 of 19th October, I have the honor to submit a Form, which in my opinion affords the information required, and is I consider a much more useful one than the B B I form of Register of Works.

I have the honor to be,
Sir,
Your most obedt Servant
W Farewell Lt Coll S.C.
Ag Supg Engr 7th Divn

Pro 19 Oct/71 No 140 Pro

P. Wr. 1871 Depart
Pro: of Govt for Decr
No 5169.

From

The Supdg Engineer
7th Division

To

The Secretary to Govt
D.P.W. Madras

No 166

Dated 27th
Recd 31st } October 1871

Sery.

Forwards Form
of Register of works
with reference to G.O
No 140 of 19th October /71

No 3107 - 9th Decr/71.

No 158

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	120	120	[illegible]
[illegible]	[illegible]	12	[illegible]
	[illegible]	12	[illegible]
		208	
		80	

Form 2

Register of Works in the Coimbatore Range - Coimbatore District.

Coimbatore Channel Sanctioned in G.O. No of

Sub Heads of the Estimate.	Per	Estimate: Quantity	Estimate: Rate	Estimate: Amount	Expenditure in this month: Quantity	Expenditure in this month: Rate	Expenditure in this month: Amount	Expenditure up to this month: Quantity	Expenditure up to this month: Rate	Expenditure up to this month: Amount	Remarks
Earth work	Cyd	10600	2	1325	10600	2 6	1656 4	10600		1656 4	Completed
Do	do	15000	3	2812 8	10050	2 9	1727 5 6	15000		2578 2	do
Do	do	20220	4	5055	1600	4	400	15600		3900	In progress
Bridge work of 1 Arch of 30 ft Span over the Channel											
Rough stone in mortar	Cyd	30	3	90				30	3	90	Completed
do do	do	52	3 8	182				52	4	208	do
Arch work Brick in do	do	75	7	525	75	7	525	75	7	525	do
Plastering with Chunam	Syds	28½	3	85 8	28½	3	85 8	28½	3	85 8	do
Centrings	Rft	30	5	150	30	5	150	30	5	150	do
Metalling the Roadway	Cyd	17	1	17							In progress
Excavating foundation	do	60	2 6	9 6				70	2 6	10 15	Completed

Escape Weir 12 ft Body

Escape weir 12 ft Body

Rough stone in mortar	Cyd	50	3 " "	150 " "						In progress
Cut stone	Cft	18	" 8 "	9 " "						In progress
Concrete flooring to Apron	Cyd	12	2 8 "	30 " "						In progress
Upright stones well (3' x 1' x 8") groved	Each	4	3 " "	12 " "						In progress
Wooden shutters	Cft	6	3 " "	18 " "						In progress
Excavating foundation	Cyd	28	" 2 6	4 6 "			28	" 2 6	4 6 "	Completed
Sundries	Cent		5 " "	525 4 "		190 4 "			420 10 6	
				11,000 " "		4734 5 6			9628 13 6	

Supg Engrs Office 7th Dn.
Coimbatore
27th October 1871

[illegible] Lt Colonel S.C.
Ag. Supg Engineer 7th Divn.

In a letter from the Supg Engineer 7th Division to the Se=-cretary to Govt dated 27th October 1871. No 166

P. W. 5169/71

Forwd of Register of works-

No 2222 Superintg Engineer's Office 8th Dn
Camp Sholapoorum 19th Sept. 1871

From
Lieut. Colonel R A Roberts RE
Superintg. Engineer 8th Division

To
Colonel J Carpendale RE
Secretary to Government DPW

Sir,

Encls 1

In reference to G O of the 7th August 1871 No 2040, enquiring as to the manner in which the orders of the Government of India can best be carried out in this Presidency in respect to large works of Irrigation and Navigation, I have the honor to enclose a form which I consider will most readily and thoroughly afford the required information.

I have the honor to be
Sir
Your Most Obdt. Servant
Richd. Roberts Lieut. Col. RE
Superintg. Engineer 8th Dn

Pro 7th Aug /71 No 63. 64

Public Works 1871 Departmen
Pro of Govt No 5222

From
No 456
25-9-71

The Supt of Engin
8th Divis

To
The Secy to Gov
P W D

Dated 19th Septr 18
Recd 25th "
Encls 1

Submits a form of
Statement in respec
to large works of
Irrigation & Navig
-tion.

No 3107 - 9th Dec /7

No 153

Project for the diversion of the Perryaur. Amount of Estimate Rs. Sanctioned in G. O. No. dated

Northern Main Channel

Miles 1 to 5 inclusive

Abstract Statement showing the progress made with, and the cost of, the works, in the first Reach, up to the end of April 1870

23

Abstract of the Estimate								Work executed up to date and paid for		Works Executed up to date but not paid for		Total work executed up to date		Average cost of work up to date				Remarks
Quantities in Cubic yards	Description of work	Rate			Amount			Quantity or Number	Expenditure	Quantity or Number	Amount due to Contractors & workmen	Quantity	Expenditure				Per.	
		Rs.	A	P	Rs.	A	P		Rs. A. P.		Rs. A. P.		Rs. A. P.	Rs.	A	P		
30	Droved Gneiss	25	„	„	750	„	„	Cyds. 15	375 - „ -	Cyds. 10	250 - „ -	25 Cyds.	625 - „ -	24	8	„	Cyds.	
300	Dressed Ashlar	15	„	„	4500	„	„	200	3000 - „ -	50	750 - „ -	250	3750 - „ -	14	12	„	Do.	
1000	Roughly Dressed Ashlar	11	8	„	11500	„	„	600	6900 - „ -	200	2300 - „ -	800	9200 - „ -	11	4	„	Do.	
1000	Cyclopean Rubble in Mortar	7	„	„	7000	„	„	700	4900 - „ -	100	700 - „ -	800	5600 - „ -	6	8	„	Do.	
800	Brick in Mortar	6	„	„	4800	„	„	500	3000 - „ -	100	600 - „ -	600	3600 - „ -	5	12	„	Do.	
5000	Rubble in Mortar	5	8	„	27500	„	„	3500	19250 - „ -	1000	5500 - „ -	4500	24750 - „ -	5	6	„	Do.	
300 Sqrs.	Pointing	1	„	„	300	„	„	200 Sqrs.	200 - „ -	50 Sqrs.	50 - „ -	250 Sqrs.	250 - „ -	„	14	„	Sqrs.	
1500 Cyds.	Rubble apron	2	8	„	3750	„	„	1000 Cyds.	2500 - „ -	300 - Cyds.	750 - „ -	1300 Cyds.	3250 - „ -	2	14	„	Cyds.	
150	Pitching	3	„	„	450	„	„	100	300 - „ -	30	90 - „ -	130	390 - „ -	2	12	„	Do.	
800	Concrete	4	„	„	3200	„	„	500	2000 - „ -	200	800 - „ -	700	2800 - „ -	3	12	„	Do.	
400	Filling in	„	4	„	100	„	„	200	50 - „ -	150	37 - 8 - „	350	87 - 8 - „	„	3	„	Do.	
300	Clay Puddle	„	8	„	250	„	„	300	150 - „ -	150	75 - „ -	450	225 - „ -	„	7	„	Do.	
80000	Gravel cutting	„	2	6	12500	„	„	40000	6250 - „ -	20000	3125 - „ -	60000	9375 - „ -	„	2	3	Do.	
75.000	Cutting (hard Gravel	„	2	9	12890	10	„	37500	6445 - 5 - „	18750	3222 - 10 - 6	56250	9667 - 15 - 6	„	2	6	Do.	
40000	Do. Gravel	„	2	3	5625	„	„	20000	2832 - 8 - „	10000	1416 - 4 - „	30000	4248 - 12 - „	„	2	„	Do.	
10000	Gravel cutting	„	2		1250	„	„	5000	625 - „ -	2500	312 - 8 - „	7500	937 - 8 - „	„	1	9	Do.	
23000	Cutting (ordinary soil)	„	1	3	1796	14	„	11500	898 - 7 - „	5750	449 - 3 - 6	17250	1347 - 10 - 6	„	1	„	Do.	
100,000	Do. (Sandy)	„	1	„	6250	„	„	50000	3125 - „ -	25000	1562 - 8 - „	75000	4687 - 8 - „	„	„	9	Do.	
40000	Banking	„	2	„	5000	„	„	20000	2500 - „ -	10000	1250 - „ -	30000	3750 - „ -	„	1	9	Do.	
4000	Puddling	„	4	6	1125	„	„	2000	562 - 8 - „	1000	281 - 4 - „	3000	843 - 12 - „	„	4	3	Do.	
60000	Ramming	„	„	2	625	„	„	30000	312 - 8 - „	15000	156 - 4 - „	45000	468 - 12 - „	„	„	1½	Do.	
6000	Rough stone Pitching	2	„	„	12000	„	„	3000	6000 - „ -	1500	3000 - „ -	4500	9000 - „ -	1	14	„	Do.	
1500	Gravel Backing	„	4	„	375	„	„	500	125 - „ -	500	125 - „ -	1000	250 - „ -	„	3	6	Do.	
50,000 Sqr. yds.	Turfing	„	„	9	2343	12	„	25000	1171 - 14 - „	12500	585 - 12 - „	37500	1757 - 13 - „	„	„	8	Sqr. yard	
		„	„															

Note. This Statement should be despatched to the Superintending Engineer monthly.

Enclosure in a letter
from the Supg Engineer
8th Division to the
Secretary to Governmt
P.W.D. No. 2222 dated
19th September 1871

P.W. 4536/71

P 14

No. 411.

Special Executive Engineer's Office, Wynaad, Vythery
23rd August 1871.

From, The Special Executive Engineer Wynaad

To, The Secretary to Government Department of Public Works Madras

Sir,

In reply to G. O. No. 2040 dated 7th Instant I have the honor to reply that in this District there are no works of the large description contemplated in the above, but as regards the general question the form observed in the work Register would I should say answer every purpose if a line were left for explanatory remarks.

Name of work.

	Foundation Masonry		Superstructure		Centering	
Subheads	Quantity	Cost	Quantity	Cost	Quantity	Co[st]
Estimated amount as sanctioned						
Work executed to date						
Remarks						

I have the honor to be
Sir,
Your most Obedient Servant

R H B Rennie
Major
Special Executive Engineer
Wynaad.-

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Pro 7 Aug/71 No 63-64

Offe: of Govt. for [illegible]

~~From,~~ No 4020

The Special Executive Engineer Wynaad

To, The Secretary to Government. D. P. W. Madras

Dated 23rd } August 1871
Recd 28th }

Informs that there are no works of the large description contemplated in G. O. No 2040 dated 7th August 1871 but submits a form which if adopted will answer every purpose

No 3107 - 9th Decr/71.

No 160

Proceedings of the Madras Government. Read the following

From the Supdg Engr 1st Circle
" — " — " 2 do
" — " — " 3 do
" — " — " 4 do
" — " — " 5th do
" — " — " 6th do
" — " — " 7 do
" — " — " 8 do
" The Special Executive Engr Hyderabad

H.E. No 1778 of 1 September 1871
H.E. No 62 of 21 August 1871
H.E. No 1464 of 1st November 1871
H.E. No 243 of September 1871
H.E. No 173 of 1 November 1871
H.E. No 4279 14 August 1871
H.E. No 166 of 27th October 1871
H.E. No 2222 of 19 September 1871
H.E. No 40 of 25th August 1871

The papers above referred to will now be forwarded to the Controller of Public Works Accounts and to the Chief Engineer for Irrigation, with a view to their selection of a form, embodying the information considered necessary by the Govt. of India, after due consideration of the remarks & suggestions of the several Superintending Engineers -

2 It is necessary that

the particular circum-
-stances under which it
is proposed to demand
this information, should
be kept fully in view.
This is required in order
to enable Chief or Super-
-intending Engineers in
Charge of large projects
to detect not alone actual
but also impending Excesses
on the original Estimates
whether owing to enhancement
of the rates, to under-estimate
of the quantities of work
required or to any other
of the ordinary Causes
And it is further thought

desirable to ensure
more fully than before,
~~that~~ deviations from
the Estimate in the
distribution of the
proposed outlay over
the several items or
subdivisions of a project
should not pass unquestioned

3. One of the Officers who
have recently been consulted
on the subject suggests
~~that~~ the present form
of numerical Progress Report; with
the addition in lump
sums of the sub heads
of ~~the Estimate~~ to which
the outlay for the month
belonged would suffice
for the purpose in view.

Such as neither the Quantity
or rate in the Estimate,
nor the Quantity, rate &
outlay of the Committee on
the several Sub heads
is proposed to be inserted
And as consequently excess
in the Expenditure on a
Sub head, or in the rates
paid would not necessarily
be detected by an inspection
of such a document: the
Arrangement is hardly
Sufficiently Complete.

The Superintending Engineer
of the 2d. Div is in favour
A form of Comparative
Statement, ordinarily
used, as answering

23

the Requirements of the Supreme Govt. And the Officer in Charge of the 5th Division makes a similar Suggestion. The information given in this document, which is supposed invariably to Accompany Revised Estimates of works of any importance is very Complete. It Exhibits the Quantity Rate and Cost, of Each description of work. As originally Estimated, & that actually Constructed, The Quantity rate & Cost under Each Subhead required to Complete the structures (again Estimated

from actual measurement)
And the total estimated
cost also in detail as revised
The preparation of such
an Abstract is however
a laborious process & is
in reality only necessary
when it becomes expedient
to submit revised Estimates.
The form is therefore ill
calculated for use as a
periodical return.
Two Officers express an
opinion ~~that~~ the 'Registers
of works' ~~kept in all~~
ranges gives the necessary
information and one
of them proposes that
it should be furnished

half yearly to the
Superintending Engineer.
The form referred to
Shows the Expenditure
on a work during each
month or other period,
under each sub head
of the Estimate and
Compares the total Ex-
-penditure to date with the
Estimate. All this
should be known and
Constitutes most of
the information necessary
but something more could
be inserted with advantage
and moreover the form
itself would require
rearrangement to adapt
it for use on any work
of magnitude, ~~such~~ such

as is contemplated in the Circular of the Govt. of India.

The Other Officers to whom reference has been made severally forward forms of statement which they propose for adoption; but though all of them would answer the purpose in view to a greater or less extent; none would do so as fully as is desirable.

The three forms now in use in this Department & to which allusion has been made by the Supt: Engineers, viz; "the Com-parative Statement

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The 'Register of Works' & the 'Progress Report' though they are intended to subserve different purposes, have much in common in respect of the information which they severally contain & it is considered that a statement or form of Progress report which should be to some extent a combination of the three would not necessarily be voluminous & would probably best answer the purpose in view.

The Progress report which has during past years & up till now been required by Govt. from the Madras Irrigation & Canal Coy is the result of practical experience as to the requisites in the case of the construction of large works & though that return might probably be modified with advantage a reference to it would supply useful information as to what details are really required & can readily be supplied.

Asst. Secy

To
66 Ch. Engr. for Irrigation
5 Engineers
13 Controller

Despd. 4/12/71.

155
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Nos. 4242, 4012, 5274, 4246, 5368, 3867, 5169, 4536, 4020

Govt. of {1871} Madras.

PUBLIC WORKS.

To The Actg Chief Engineer for Irrigation

Dated

Recd. Encl. 4

G. O., 9th Decr 1871, No. 3107.

Nos. 152 @ 161

[Ag]reement of actual with [es]timated cost of work.

[Re]p[ort]g my orders on corres[po]ndence regarding the [be]st mode of preserving [ag]reement of actual with [e]stimated cost of work.